NGCP: Building the Capacity of STEM Practitioners to Develop a Diverse STEM Workforce

Sisters 4 Science
Project Exploration
Chicago, IL
Agenda

• Introductions
• **Activity: Speed Networking**
• Why Stem? Why Girls? Why Oregon?
• *Implementation in Oregon: Small Group Discussion*
• NGCP Vision, Goals, Model Components
• Questions and Discussion
• **Activity: Roundtable Discussions**
• Next Steps & How You Can Help
• Questions & Announcements
Introductions
Speed Networking
Speed Networking

- Your Name
- Your Organization/Program & Role
- Resources (what do you have to share?)
- Needs (what do you need to meet your goals?)
- 2 Minutes Each
- Bring your business card to exchange
- You will need a pen to write down great ideas!
Why STEM?

• STEM is a critical engine for innovation and growth. The STEM workforce accounts for more than 50% of the nation’s sustained economic growth.

• In the next 5 years, there will be 2.4 million job openings in STEM fields

Sources: US Dept. of Labor and Georgetown University, 2011
Why STEM?

• STEM fields will experience **17.5% growth** from 2008-2018

• In comparison, the average growth in **non-STEM** areas will only be **9.8%**

• STEM workers **earn 26% more** than their non-STEM counterparts

Source: Fortune Magazine, July 15, 2011
Best Jobs in America

Online Employee
Education (IT, 1,000,000)
$87,100 | $130,000

Mathematician
Math (80,000)
$90,900 | $124,000

Actuary
Financial (270,000)
$70,400 | $115,000

Statistician
Other (21,000)
$85,200 | $113,000

IT Project Manager
IT (177,400)
$98,700 | $140,000

Certified Public Accountant
Finance (189,000)
$74,200 | $138,000

Physical Therapist
Healthcare (181,000)
$74,300 | $98,100

Computer/Network Security Consultant
IT (13,000)
$99,700 | $152,000

Intelligence Analyst
Government (15,000)
$82,500 | $115,000

Sales Director
Sales and Marketing (93,000)
$140,000 | $239,000

Anesthesiologist
Healthcare (199,000)
$292,000 | $408,000

Software Developer
IT (196,000)
$79,400 | $116,000

Pharmacist
Healthcare (196,000)
$109,000 | $134,000

Occupational Therapist
Healthcare (197,000)
$69,700 | $100,000

Nurse Anesthetist
Healthcare (199,000)
$157,000 | $214,000

Business Analyst, IT
IT (125,000)
$82,600 | $119,000

Attorney/Lawyer
Legal (581,000)
$115,000 | $262,000

Physician/General Practice
Healthcare (90,000)
$150,000 | $228,000

Human Resources Manager
Other (226,000)
$71,800 | $111,000

Senior Financial Analyst
Financial (127,000)
$79,900 | $109,000

Physician/Obstetrician/Gynecologist
Healthcare (14,000)
$222,000 | $338,000

Clinical Psychologist
Healthcare (57,000)
$81,100 | $172,000

Psychiatrist
Healthcare (20,000)
$177,000 | $279,000

Veterinarian
Other (68,000)
$83,900 | $157,000

Telecommunications Network Engineer
IT (21,000)
$86,200 | $130,000

Securities Trader
Financial (201,000)
$113,000 | $491,000

Education/Training Consultant
Financial (23,000)
$77,800 | $157,000

Emergency Room Physician
Healthcare (22,000)
$249,000 | $386,000

Product Management Director
Sales and Marketing (17,000)
$145,000 | $201,000
Why Girls?

• Girls and boys do not display a significant difference in their abilities in math and science.
• Women continue to be underrepresented in STEM at college and workforce level
• STEM is an equity issue
National 20-Year Trends in STEM Interest
Why Oregon?

**STEM SKILLS ARE IN DEMAND**
In Oregon, STEM skills have stayed in demand even through the economic downturn.

**STEM:**
- 1.7 jobs for every 1 unemployed person

**Non-STEM:**
- 4.3 unemployed people for every 1 job
Why Oregon?

Oregon must plug gaps in the STEM pipeline

What percentage of high school students graduate? (2009)

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<thead>
<tr>
<th></th>
<th>Oregon</th>
<th>U.S.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>76.5%</td>
<td>75.5%</td>
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</table>

Of students who enter a two-year degree program, what percentage graduate? (2009)

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<th>Oregon</th>
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<tbody>
<tr>
<td></td>
<td>29.3%</td>
<td>29.2%</td>
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Of students who enter a four-year degree program, what percentage graduate? (2009)

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<td>56.5%</td>
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NGCP Vision

The National Girls Collaborative Project (NGCP) brings together organizations that are committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).
Project History

• Northwest Girls Collaborative Project (2002-2004)
• California, Massachusetts, and Wisconsin (2004-2006)
• National (2006-2011)
• Diverse Workforce (2011-2016)
Project Impact

- **15.4 million** visits to the NGCP website
- **3,150** programs are listed in the online NGCP Program Directory
- **27,579** participants served in **241** mini-grants completing activities
- **17,177** practitioners have been served through events and webinars
- **7.8 million girls** are served indirectly by NGCP by having their leaders trained in the philosophy, knowledge, and methods of NGCP (**4.5 million Boys served too!**)
Collaboratives
Access to Shared Resources
Strengthening Capacity
Equity
Why Collaborate?

Uncoordinated Services
• Collaboration allows for the creation of a higher quality, more integrated experience.
• Collaboration reduces isolation among STEM professionals.

Scarce Resources
• Collaborative relationships increase access to scarce resources.
Why Collaborate?

Increased Capacity

• Collaboration strengthens relationships among organizations, increasing the potential for learning by sharing promising practices.

• Organizations have increased ability to achieve important outcomes and increase impact.
NGCP Components and Activities

Virtually:
• Content Rich Project Website
• E-Newsletter
• Webinars
• Program Directory

Collaboratives:
• Professional Development: Conferences and Forums
• Incentives to Collaborate: Mini-Grants
• Newsletters and Local Resources
Information Technology

ACM's Committee on Women in Computing - Association for Computing Machinery
http://www.acm.org/women
Conferences, mentoring, networking, and internships

Anita Borg Institute for Women and Technology
http://anitaborg.org

Association for Women in Computing
http://www.awc-hq.org
Promotes the advancement of women in computing. Mentoring, speakers, scholarships

BinaryGirl.com
http://www.binarygirl.com
Detailed interviews with women in a variety of tech fields. Message board for online networking

Carnegie Mellon Project on Gender and Computer Science
http://www.cs.cmu.edu/afs/cs/project/gendergap/www/index.html
Women in Computer Sciences: Closing the Gender Gap in Higher Education

Center for Women and Information Technology
http://www.cnit.umbc.edu/
Seeks to address and rectify women's under-representation in IT

Cisco Learning Institute Gender Initiative
http://www.cisco.com/web/about/ac227/ac222/society/socioeconomic_development_programs/gender_initiative.html
Includes recruitment & retention strategies, best practice sites, female role models, and country reports on IT & gender

GirlGeeks
http://www.girlgeeks.org
Career, training, and mentoring community for women and girls in technology
Exemplary Practices Overview

The National Girls Collaborative Project™ disseminates exemplary practices related to engaging girls in STEM, Collaboration, and Evaluation and Assessment. These practices include strategies, curricula and resources that have research and/or evaluation data to support their effectiveness. The exemplary practices help build the capacity of girls-serving organizations, education, and industry to provide high-quality opportunities for girls in STEM, create effective collaborations, and to effectively evaluate and assess their efforts.

NGCP aims to make exemplary practices accessible, disseminating these practices via the NGCP website, NGCP webinars, and NGCP Collaborative events. Mini-grant projects must also incorporate appropriate exemplary practices. Mini-Grant applicants need to describe the exemplary practices their project will include and how those practices relate to project goals.

"These resources gave me a better understanding of what grantors were looking for in evaluating a program. It provided us with a key element of our program effectiveness."
# NGCP Program Directory

<table>
<thead>
<tr>
<th>Program Name</th>
<th>City</th>
<th>State</th>
<th>ZIP Code</th>
<th>Organization</th>
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### Affiliation
- Any

### Collaborative
- Any

- National - This program serves many different areas nationwide.

### Focus
- Science
- Technology
- Engineering
- Math
- Computer Science
- Business
- Humanities
- Arts

### Resources needed
- boys interested in STEM activities
- computer access
- computer technology support
- conferences
- curriculum development
- equipment donations
- evaluation/assessment services
- facilities
- funding

### Resources available
- boys interested in STEM activities
- computer access
- computer technology support
- conferences
- curriculum development
- equipment donations
- evaluation/assessment services
- facilities
- funding

### Populations served
- 2 year college
- 4 year college or university
- at-risk
- diversity focus
- elementary
- employers
- high school
- homeless
- incarcerated youth

### Collaboration interests
- curriculum development
- joint event planning
- providing in-kind support
- sharing resources
- sponsorship
- working with higher education

### Service delivery format
- after school programs
- classroom support
- clubs
- museums
- online learning
- special events
E-Newsletter

National Girls Collaborative Project

October 2013

Building the Capacity of STEM Practitioners to Develop a Diverse Workforce

In This Issue

NGCP Updates ~ Collaborative Network Activities ~ Champions for Collaboration ~ FabFems Spotlight ~ Upcoming STEM Events ~ Resources ~ Global Resources

NGCP Updates

NGCP Increases Collaboration
High levels of collaboration among educators and programs engaging girls in STEM increases the efficiency, effectiveness, and capacity of programs and therefore increases opportunities and improves experiences for girls in STEM. NGCP Increases Collaboration is a visually appealing and user-friendly publication that describes the strategies used by NGCP and the positive outcomes that result.

Meeting or learning about new people or organizations is the most likely factor to increase levels of collaboration.

The most common uses of the NGCP Program Directory are to locate nearby programs and to find collaborative partners.
NGCP Webinars

Webinar Archive

The NGCP works to strengthen the capacity of existing girl-serving STEM projects by sharing research findings and program models. One method we use to achieve this goal is a series of free webinars in which practitioners and researchers from across the country share effective strategies for working with girls in STEM.

You may access the audio/video content and related materials from any of our archived webinars by selecting the webinar title in the list below.

“NGCP provides information regarding all aspects of STEM through newsletters and webinars and keeps up my motivation to strive for higher levels of collaboration. I also seek new relationships and try to capitalize on both regional and national NGCP partnerships. I have found great ideas to incorporate into our programs which have very specific audiences.”

Annual Survey Respondent
NGCP Events
Mini-Grants

Bridge Building
How Can You Benefit?

• Collaborative Events
  • Professional development
  • Networking with professionals who share common goals
  • Access to resources and experts in your area
• Program Directory
• Mini-grants
• Online resources
  • Website
  • Webinars – Archived and Live
  • E-Newsletter
Additional Resources

FabFems

Share your past.
Spark a future.

Find a Role Model
Become a Role Model

About FabFems
FabFems are women from a broad range of professions in science, technology, engineering and mathematics (STEM). They are passionate, collaborative, and work to make the world a better place. Many girls have similar interests but aren’t connected to adults who exemplify the STEM career pathway. This is where you come in. Create a FabFems profile to expand girls’ career options, dispel stereotypes and spark their interests – just by being you.

Learn More About the FabFems Project
Questions?

Kentucky Mini-grant activity
Discussion

- Inform NGCP Implementation in Your Region
  - Choose a topic
  - Choose a Reporter and a Recorder
  - Spend 10 minutes in discussion
  - Report 3 “Big Ideas” back to the large group

- Roundtable Discussion Topics:
  - Collaboration
  - Programs/Opportunities
  - Funding
  - Resources
Discussion

Collaboration
• What are some of the real or perceived barriers to collaboration in this region?
• How can the NGCP facilitate collaboration among various organizations serving girls in STEM?

Programs/Opportunities
• What unique STEM opportunities exist in your community?
• Are you aware of programs with a focus on underrepresented populations?

Funding
• What resources or training topics might be useful to you in this topic?
• Who are some potential businesses, foundations, or local industry partners that might be interested in supporting this work?

Resources
• What other activities and projects can be leveraged?
• What resources and tools do practitioners need most?
Get Involved

• Enter your program or organization in the Program Directory:
  http://www.ngcproject.org/programs

• Participate in upcoming webinars and view archived webinars:
  http://www.ngcproject.org/resources/webinar_archive

• Find resources and relevant websites:
  http://www.ngcproject.org/resources
Get Involved

• Offer space or other in-kind resources to host an event in your area

• **Volunteer your time or expertise**
  • Considering joining the Leadership Team or Champions Board

• **Spread the word**
  • Recommend the Leadership Team or Champions Board to a colleague or friend
  • Encourage others to sign up in the Program Directory, view the website, and attend events
Next Steps

Follow-up email
- Presentation slides
- Updated Contact List
- Program Directory
- Event Evaluation

- Map resources and programs across the state and conduct outreach to organizations that can benefit
- Collaboration Institute- Feb 2014
- Collaborative Events- Begin Spring 2014
Contact Information

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